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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/708,217

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Robert Geary

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03/04/2010

BRANDON N. SKLAR, ESQ. (PATENT PROSECUTION)

KAYE SCHOLER, LLP

425 PARK AVENUE

NEW YORK, NY 10022-3598

EXAMINER

PATEL, NIHIR B

ART UNIT

PAPER NUMBER

3772

MAIL DATE

DELIVERY MODE

03/04/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/708,217	GEARY, ROBERT	
	Examiner	Art Unit	
	NIHIR PATEL	3772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on RCE filed on 08/26/2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-11 and 17-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-4, 7 and 11 is/are allowed.
- 6) ☒ Claim(s) 5, 6, 8, 9, 18, 21, 23, 24, 26 and 28 is/are rejected.
- 7) ☒ Claim(s) 10, 17, 19, 20, 22, 25 and 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>08.26.2009</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 26th, 2009 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims **2-11 and 17-20** have been considered but are moot in view of the new ground(s) of rejection.

Response to Amendment

3. The examiner acknowledges the amendment filed on August 26th, 2009. The amendment comprises amending claims 2-11 and 17-20; cancelling claims 1 and 12-16; and adding new claims 21-28.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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5. Claims **8, 18, 24, 26 and 28** are rejected under 35 U.S.C. 102(b) as being anticipated by Curry et al. (US 5,791,982).

6. **As to claim 8**, Curry teaches a method step of separating nitrogen from ambient air onboard the aircraft thereby establishing a high-concentration nitrogen supply in a first location **(see col. 6 lines 50-60)**; and dispensing high concentration nitrogen from the first location to a fire susceptible, non habitable internal region separate from a fuel tank thereby decreasing a capability for an atmosphere of the fire susceptible, non habitable internal region to support combustion by reducing a partial pressure of oxygen within the atmosphere **(see col. 6 lines 50-60)**.

7. **As to claim 18**, Curry teaches a method step wherein the fire susceptible, internal non habitable region outside the fuel tank is a baggage compartment **(see col. 3 lines 60-67)**.

8. **As to claim 24**, Curry teaches an apparatus that comprises a gas separation unit to separate ambient air from a habitable area into a nitrogen rich flow and an oxygen rich flow **(see col. 3 lines 40-50)**; a plurality of sensors monitoring at least one condition within at least one region of an aircraft **(see col. 3 lines 1-5 and col. 4 lines 10-20)**; and a central control unit **41** controlling a dispensation of the nitrogen rich flow and the oxygen rich flow based in part on an output of the plurality of sensors **(see col. 4 lines 10-20)**.

9. **As to claim 26**, Curry teaches an apparatus wherein the central control unit causes the dispensation of the oxygen rich flow into the habitable area is required **(see col. 4 lines 10-20)**.

10. **As to claim 28**, Curry teaches an apparatus wherein the habitable area comprises at least one of a passenger cabin, a cockpit, a lavatory, a galley and a vestibule **(see col. 4 lines 10-15)**.

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Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. Claims **5, 6, 21 and 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Curry et al. (US 5,791,982) in view of Crome (US 6,997,970).

14. **As to claim 5**, Curry substantially discloses the method steps of dispensing an oxygen flow from a high-concentration oxygen Supply to an occupant cabin of the aircraft to increase the level of oxygen concentration within the cabin (**see col. 4 lines 10-20**); and varying the oxygen flow and the nitrogen flow based in part on a detected condition in the aircraft (**see col. 4 lines 10-20**) but does not disclose dispensing a nitrogen flow from a high-concentration nitrogen supply to a fire-susceptible, internal non-habitable Legion outside a fuel tank of the aircraft to decrease the capability for the atmosphere therein to support combustion. Crome discloses a method step of dispensing a nitrogen flow from a high-concentration nitrogen supply to a fire-susceptible, internal non-habitable Legion outside a fuel tank of the aircraft to decrease the

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capability for the atmosphere therein to support combustion **(see col. 6 lines 60-67)**. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Curry's invention by providing a method step of dispensing a nitrogen flow from a high-concentration nitrogen supply to a fire-susceptible, internal non-habitable Legion outside a fuel tank of the aircraft to decrease the capability for the atmosphere therein to support combustion as taught by Crome so as to reduce the possibility of explosive conditions in the fuel tank and to help extinguish fires in the cargo bay.

15. **As to claims 6 and 23**, Curry substantially discloses the method steps of establishing a supply of nitrogen rich air by separating nitrogen from ambient air onboard the aircraft **(see col. 3 lines 40-50)** but does not disclose a method step of storing the supply of nitrogen rich air in an unoccupied area and introducing the nitrogen rich air stored in the unoccupied area into the an occupied area. Crome discloses an apparatus that does provide a method step of storing the supply of nitrogen rich air in an unoccupied area **130 and 140 (see col. 6 lines 60-65; it is obvious to one having ordinary skill of the art that the nitrogen rich air be stored in an unoccupied area away from passengers in order to prevent it from being contacted with passengers)** and introducing the nitrogen rich air stored in the unoccupied area into the an occupied area **330 (see col. 6 lines 60-67; the applicant's definition of occupied area is broad and the cargo bay can be considered occupied area since it is occupied by baggage's and other cargo)**. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Curry's invention by providing a method step of storing the supply of nitrogen rich air in an unoccupied area and introducing the nitrogen rich air stored

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in the unoccupied area into the an occupied area so as to reduce the possibility of explosive conditions in the fuel tank and to help extinguish fires in the cargo bay.

16. **As to claim 21**, Curry substantially discloses a method step wherein the detected condition is at least one of a partial pressure of oxygen values, flight parameters, aircraft configuration, and smoke/fire warning status (**see col. 4 lines 10-20**).

17. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Crome (US 6,997,970) in view of Curry et al. (US 5,791,982).

18. **As to claim 9**, Crome substantially discloses a method comprising separating oxygen from ambient air onboard the aircraft thereby establishing a high concentration oxygen supply (**see col. 7 lines 1-6**) but does not disclose a method step of dispensing high-concentration oxygen from the high-concentration oxygen supply to an occupant cabin of the aircraft thereby increasing a level of oxygen concentration within the cabin to a level greater than a naturally occurring partial pressure of oxygen at an experienced internal cabin pressure. Curry discloses a method step of dispensing high-concentration oxygen from the high-concentration oxygen supply to an occupant cabin of the aircraft thereby increasing a level of oxygen concentration within the cabin to a level greater than a naturally occurring partial pressure of oxygen at an experienced internal cabin pressure (**see col. 4 lines 10-20**). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Crome's invention by dispensing high-concentration oxygen from the high-concentration oxygen supply to an occupant cabin of the aircraft thereby increasing a level of oxygen concentration within the cabin to a level greater than a naturally occurring partial pressure of oxygen at an

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experienced internal cabin pressure as taught by Curry in order to minimize passenger discomfort level.

Allowable Subject Matter

19. Claims **2-4, 7 and 11** are allowed. In reference to claim 2, the prior art does not teach a method of directing oxygen from the high concentration oxygen supply overboard if a lower atmospheric oxygen concentration is required in combination with other recited limitations. In reference to claims 3 and 11, the prior art does not teach adding nitrogen from the high-concentration nitrogen supply into the habitable region to dilute the oxygen concentration if the reduced oxygen concentration is required in combination with other recited limitations. In reference to claim 4, the prior art does not teach a method step of continuously detecting an absolute pressure and an oxygen percentage in the occupant cabin and the fire susceptible non habitable areas of the aircraft as well as computing a partial pressure of oxygen within the occupant cabin and the fire susceptible, non habitable areas of the aircraft based upon the absolute pressure and the oxygen percentage in combination with other recited limitations. In reference to claim 7, the prior art does not teach a method step of introducing the nitrogen rich air stored in the non habitable area of the aircraft into the habitable area, in conjunction with directing the oxygen rich air overboard if a fire is detected onboard the aircraft in combination with other recited limitations.

20. Claims **10, 17, 19, 20, 22, 25 and 27** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the

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limitations of the base claim and any intervening claims. The prior art does not teach a method step of determining that reduced oxygen concentration is required in the occupant cabin and responsively initiating a mixing of the reservoir high concentration nitrogen, thereby diluting the oxygen concentration in the occupant cabin or wherein the central control unit causes the dispensation of the nitrogen rich flow into the habitable area if a reduced oxygen concentration in the habitable area is required.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NIHIR PATEL whose telephone number is (571)272-4803. The examiner can normally be reached on 7:30 to 4:30 every other Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patricia Bianco can be reached on (571) 272-4940. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Nihir Patel/

Examiner, Art Unit 3772

/Patricia Bianco/

Supervisory Patent Examiner, Art Unit 3772